Trend Study 17-14-02

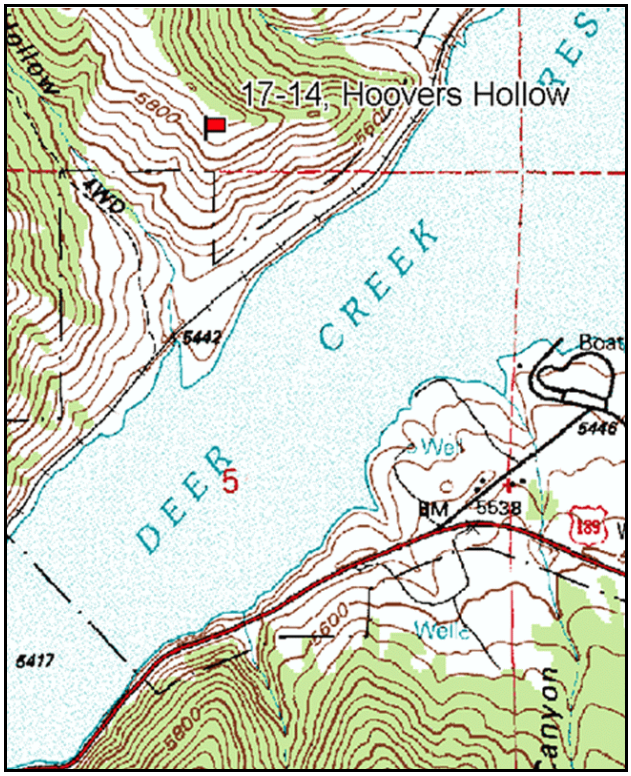
Study site name: Hoovers Hollow. Vegetation type: Big Sagebrush-Grass.

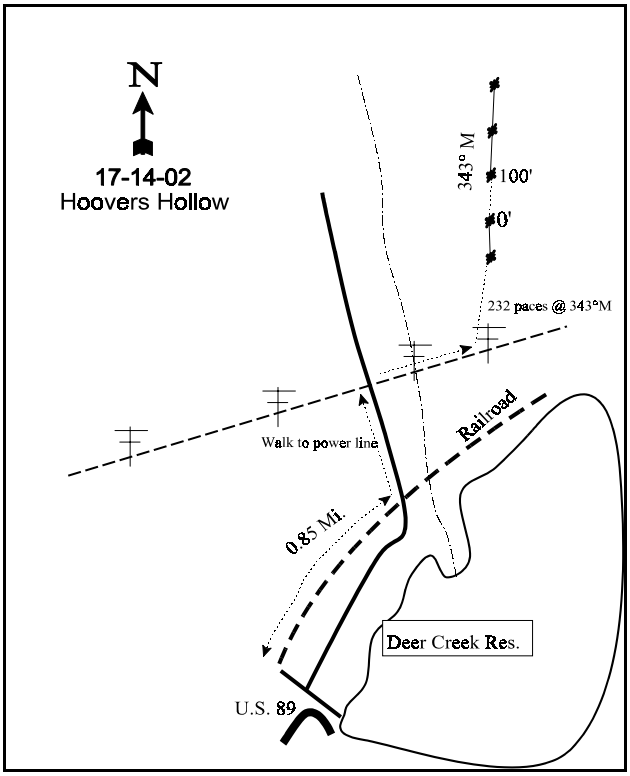
Compass bearing: frequency baseline 343 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft). Rebar: belt 5 on 1ft.

LOCATION DESCRIPTION

From the locked gate at the southwest corner of Deer Creek Reservoir, proceed 0.85 miles along the northern edge of the reservoir. Stop where the road crosses the railroad tracks. From this point, walk up the road leading towards Hoovers Hollow to a faint road to the northeast following power lines. Walk to the second pole across a small drainage and partially up the hillside. From the power pole, walk 232 paces at an azimuth of 0 degrees true, to the 0-foot baseline stake. A red browse tag, number 3949, is attached to the 0-foot baseline stake.





Map Name: Aspen Grove

Diagrammatic Sketch

Township 4S, Range 4E, Section 32

GPS: NAD 27, UTM 12S 4474345 N 456033 E

DISCUSSION

Hoovers Hollow - Trend Study No. 17-14

This study is located near the mouth of Hoover Hollow on the west side of Deer Creek Reservoir. The study is near the ridge top on a moderately steep (30%), south to southwest facing slope at an elevation of 5,800 feet. The reservoir is approximately 3/4 mile downslope from the site. Winter deer use on the ridges and slopes such as this one, is extremely heavy throughout the entire area. Pellet group transect data collected in 2002 estimated 68 deer days use/acre (169 ddu/ha) and 21 elk days use/acre (51 edu/ha). Cattle use was low at only 1 cow day use/acre (3 cdu/ha). It was reported in 1989 that domestic sheep had made a significant impact on this site for many years.

Soil texture is a clay loam with an average temperature of 49°F at a depth of 7 inches. The soil is very rocky on the surface and throughout the profile. Effective rooting depth was estimated at just under 9 inches in 1996. Rock and pavement combined to provide 26% surface cover in both 1996 and 2002. Bare soil is moderate in all years ranging from 12-16%. Vegetation cover is moderately high, but the majority comes from annual grasses and forbs. Litter cover is low at 28% or less over the last 3 readings. The abundance of annuals has not allowed litter to build-up on the site. In past years, a high rate of erosion was reported and a loss of topsoil resulted. In 1996 and 2002, surface erosion was minimal, and a soil erosion condition assessment gave soils a stable rating in 2002.

As reported in 1989, browse forage remains very limited. Mountain big sagebrush had an estimated density of only 340 plants/acre in 1996 and 2002. Age structure has shifted from a young population in 1983 and 1989, to a more mature population in 1996 and 2002. No young plants were sampled in 2002 which is not surprising due to the very dry conditions, as well as the abundance of annual species in the understory. Utilization has been moderate to heavy in all readings, but decadence and poor vigor have declined with each reading. Seedheads were forming on about 75% of the population in 2002, and annual leaders averaged just over 3 inches. Other palatable browse on the site include white-stemmed rubber rabbitbrush, serviceberry, and a few scattered bitterbrush. These species all have low densities that are declining.

Broom snakeweed, a less desirable increaser, had an estimated density of 11,540 plants/acre in 1996. The population looked to be expanding with 59% of the population being young plants, and an astounding 21,280 seedlings/acre being sampled in 1996. In 2002, snakeweed numbered only 160 plants/acre. Snakeweed often declines during dry periods as was the case in 2002 with drought.

The herbaceous understory is dominated by annual species. Unlike many other sites around the state during the current drought, cheatgrass increased in average cover and retained nearly the same nested frequency value in 2002. Cheatgrass provided 44% of the grass cover in 1996, increasing to 73% in 2002. Japanese brome occurred in 44% of the quadrats in 2002, yet was not sampled in any of the previous readings. The most abundant annual forbs include pale alyssum, storksbill, little flower collinsia, sunflower, and bur buttercup. Sum of nested frequency of annual grasses increased in 2002, while sum of nested frequency for annual forbs declined. With drought in 2002, the decrease in annual forbs is expected, but as was reported earlier, the increase in annual grasses is somewhat surprising.

Only three perennial grass species were sampled in 2002, bluebunch wheatgrass, Sandberg bluegrass, and bulbous bluegrass. Bluebunch wheatgrass increased in nested frequency, while Sandberg bluegrass remained stable. Bulbous bluegrass was only sampled in two quadrats. Perennial forbs were moderately abundant in 1996, but with drought in 2002, they declined 69% in sum of nested frequency. The perennial forb composition has been composed of mostly less desirable species such as thistle, hairy goldaster, dalmatian toadflax, and houndstongue.

1983 APPARENT TREND ASSESSMENT

Overall trend appears to be declining, especially vegetatively. Soil, although eroded, is nonetheless capable of producing a more desirable mix of forage. However, to do so will require more than just rest from animal use. Some type of direct rehabilitation effort will be required if any meaningful short term improvement is to occur.

1989 TREND ASSESSMENT

While the site remains in poor condition, the vegetative trend is not as rapidly downward as predicted in 1983. Perennial grasses, although limited in production and desirability, increased in abundance. Trend for the herbaceous species is slightly up. Mountain big sagebrush also slightly increased in density although it remains limited. Sagebrush recruitment remains high with 42% of the population consisting of young plants. This may result in an increase in density in the future. Browse trend is stable. Soils have a stable trend. Cover of bare ground has remained similar to 1983 and basal vegetative cover has increased dramatically (2% to 9%). Litter cover has declined but it appears that much of the dried up cheatgrass was classified as litter in 1983.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - slightly up (4)

1996 TREND ASSESSMENT

Soil trend is slightly improving with increasing litter cover and decreasing bare ground. Cryptogamic crust cover has increased to nearly 3% since 1989 when it was estimated at less than 1%. The mountain big sagebrush population has remained stable since 1983 with decadency decreasing over all years. Vigor has improved and utilization has decreased. One concern is the estimated density of broom snakeweed in 1996. At 11,540 plants/acre, an increase of over 9,000 plants/acre since 1989, this population should be carefully monitored. This great increase is likely due to a greatly increased sample size used in 1996. The browse trend is stable. The herbaceous understory is stable with poor composition. Native perennial grasses are still present but are greatly out numbered by annuals and other weedy species.

TREND ASSESSMENT
soil - slightly up (4)
browse - stable (3)
herbaceous understory - stable (3)

2002 TREND ASSESSMENT

Trend for soil is stable. Soils have continued erosion but it is currently low. Although litter cover slightly decreased and bare soil slightly increased, vegetation cover remains high even though the majority comes from annual species. Trend for browse is stable. Mountain big sagebrush has a stable but low density, while decadence and poor vigor declined. No young plants were sampled in 2002, but with a competitive annual understory and drought conditions, the lack of young and seedling plants is expected. The herbaceous understory has a slightly downward trend. Although perennial grasses slightly increased in nested frequency, cheatgrass still dominates the understory. Perennial forbs declined in sum of nested frequency by 69% with drought. The composition of the understory remains dominated by weeds and increasers. One positive change is the significant increase in the nested frequency of bluebunch wheatgrass.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --
Herd unit 17 , Study no: 14

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'96	'02	'83	'89	'96	'02	'96	'02
G	Agropyron cristatum	-	1	-	-	-	1	-	-	-	-
G	Agropyron spicatum	a18	ab37	b65	c101	7	19	32	46	3.63	4.47
G	Bromus japonicus (a)	-	-	a-	b92	-	-	-	44	-	.57
G	Bromus tectorum (a)	-	-	346	347	-	-	98	100	5.82	20.35
G	Poa bulbosa	-	-	-	2	-	-	-	2	-	.01
G	Poa secunda	a35	b180	b159	b155	18	65	61	60	3.69	2.52
G	Sporobolus cryptandrus	-	-	4	-	-	-	1	-	.03	-
Total for Annual Grasses		0	0	346	439	0	0	98	144	5.82	20.92
Total for Perennial Grasses		53	218	228	258	25	85	94	108	7.35	7.00
Total for Grasses		53	218	574	697	25	85	192	252	13.17	27.92
F	Agoseris glauca	-	-	b32	a1	-	-	15	1	.19	.00
F	Allium acuminatum	a-	a3	b18	b31	-	1	10	15	.05	.13
F	Alyssum alyssoides (a)	-	-	b302	a198	-	-	94	73	1.58	2.08
F	Astragalus beckwithii	-	-	-	4	-	-	-	2	-	.15
F	Astragalus tenellus	-	-	4	-	-	-	2	-	.04	-
F	Astragalus utahensis	a2	ab2	b13	ab6	1	2	5	4	.08	.19
F	Castilleja linariaefolia	2	-	8	1	1	-	5	1	.10	.15
F	Calochortus nuttallii	a-	ab6	b12	b13	-	4	6	8	.03	.04
F	Cirsium spp.	b65	b78	b67	a2	31	38	32	2	1.11	.01
F	Collomia linearis (a)	-	-	b21	a3	-	-	11	1	.05	.00
F	Collinsia parviflora (a)	-	-	182	147	-	-	64	58	1.11	1.20
F	Cymopterus spp.	-	-	31	32	-	-	15	18	.10	.39
F	Cynoglossum officinale	-	4	-	-	-	2	-	-	-	-

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'96	'02	'83	'89	'96	'02	'96	'02
F	Draba spp. (a)	-	-	$_{b}$50	$_{a}$-	-	-	16	-	.10	-
F	Epilobium brachycarpum (a)	-	-	-	5	-	-	-	2	-	.01
F	Erodium cicutarium (a)	-	-	$_{b}$312	$_{a}$81	-	-	100	34	6.44	.80
F	Eriogonum racemosum	$_{a}$-	$_{ab}$1	$_{b}$11	$_{ab}$1	-	1	5	1	.02	.01
F	Galium aparine (a)	-	-	1	-	-	-	1	-	.00	-
F	Gilia spp. (a)	-	-	-	1	-	-	-	1	-	.00
F	Helianthus annuus (a)	$_{a}$6	$_{c}$173	$_{a}$-	$_{b}$100	4	68	-	46	-	.27
F	Heterotheca villosa	$_{a}$5	$_{a}$18	$_{b}$88	$_{a}$31	3	7	35	14	1.67	.94
F	Holosteum umbellatum (a)	-	-	190	171	-	-	62	60	2.63	.94
F	Lappula occidentalis (a)	-	-	-	3	-	-	-	1	-	.00
F	Lactuca serriola	-	3	2	-	-	1	2	-	.01	-
F	Linaria dalmatica	-	-	4	1	-	-	2	1	.03	.03
F	Machaeranthera spp	$_{a}$-	$_{a}$-	$_{b}$44	$_{a}$-	-	-	17	-	.08	-
F	Oenothera pallida	$_{a}$-	$_{a}$-	$_{b}$24	$_{b}$8	-	-	9	5	.04	.02
F	Polygonum douglasii (a)	-	-	3	-	-	-	1	-	.00	-
F	Ranunculus testiculatus (a)	-	-	58	66	-	-	20	28	.20	.23
F	Tragopogon dubius	$_{b}$64	$_{a}$10	$_{b}$73	$_{a}$3	34	6	34	1	.78	.00
F	Verbascum thapsus	-	-	4	-	-	-	2	-	.15	-
Total for Annual Forbs		6	173	1119	775	4	68	369	304	12.14	5.58
Total for Perennial Forbs		138	125	435	134	70	62	196	73	4.53	2.09
Total for Forbs		144	298	1554	909	74	130	565	377	16.68	7.67

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Herd unit 17 , Study no: 14

Type	Species	Strip Frequency		Average Cover %	
		'96	'02	'96	'02
B	Amelanchier alnifolia	2	1	.15	.38
B	Artemisia tridentata vaseyana	15	15	1.16	1.28
B	Chrysothamnus nauseosus albicaulis	18	9	.72	1.17
B	Gutierrezia sarothrae	73	6	1.55	-
B	Opuntia spp.	40	36	2.77	1.54
B	Symphoricarpos oreophilus	1	1	.15	.15
Total for Browse		149	68	6.51	4.54

CANOPY COVER -- LINE INTERCEPT
Herd unit 17 , Study no: 14

Species	Percent Cover	
	'96	'02
Artemisia tridentata vaseyana	-	2.33
Chrysothamnus nauseosus albicaulis	-	1.33
Opuntia spp.	-	1.75

Key Browse Annual Leader Growth
Herd unit 17 , Study no: 14

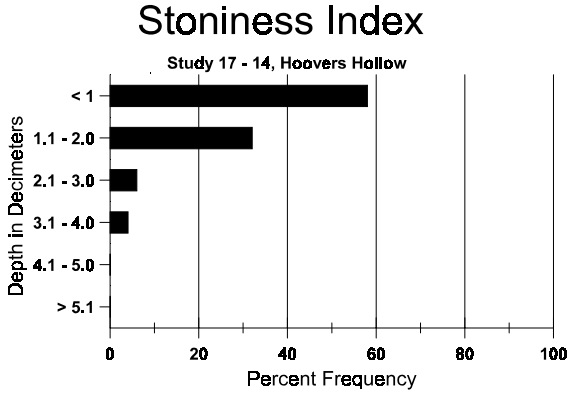
Species	Average leader growth (in)
	'02
Artemisia tridentata vaseyana	3.2

BASIC COVER --
Herd unit 17 , Study no: 14

Cover Type	Nested Frequency		Average Cover %			
	'96	'02	'83	'89	'96	'02
Vegetation	386	368	2.00	9.25	36.09	45.96
Rock	307	309	9.25	13.50	18.57	17.48
Pavement	311	325	12.25	41.75	7.71	9.44
Litter	395	365	62.75	20.50	28.28	23.36
Cryptogams	111	100	.25	.75	2.79	1.22
Bare Ground	278	279	13.50	14.25	12.42	15.90

SOIL ANALYSIS DATA --
Herd Unit 17, Study no: 14, Hoovers Hollow

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
8.9	49.2 (7.2)	7.3	34.9	35.1	30.0	2.6	25.6	92.8	.5



PELLET GROUP FREQUENCY --
Herd unit 17 , Study no: 14

Type	Quadrat Frequency		Pellet Transect	
			Pellet Groups per Acre	Days Use per Acre (ha)
	'96	'02	'02	'02
Rabbit	1	2	-	-
Elk	10	12	270	21 (51)
Deer	28	29	887	68 (169)
Cattle	-	-	17	2 (4)

BROWSE CHARACTERISTICS --
Herd unit 17 , Study no: 14

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier alnifolia																		
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	1	-	-	-	-	-	-	-	1	-	-	-	20	13	21	1
	02	-	-	1	-	-	-	-	-	-	1	-	-	-	20	18	25	1
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	1	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	00%	00%	00%	
'96	50%	50%	00%	-50%
'02	00%	100%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'83	0	Dec:		0%
'89	0			0%
'96	40			50%
'02	20			0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	4	-	-	-	-	-	-	-	-	4	-	-	-	133			4
	89	1	2	2	-	-	-	-	-	-	5	-	-	-	166			5
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	-	-	1	-	-	-	-	-	-	-	-	1	-	33	20	22	1
	89	1	1	2	-	-	-	-	-	-	3	1	-	-	133	15	18	4
	96	-	6	5	-	-	-	-	-	-	11	-	-	-	220	17	31	11
	02	4	10	1	-	-	-	-	-	-	15	-	-	-	300	19	32	15
D	83	-	-	3	-	-	-	-	-	-	2	-	1	-	100			3
	89	-	-	3	-	-	-	-	-	-	2	-	1	-	100			3
	96	1	2	-	-	-	-	-	-	-	2	-	-	1	60			3
	02	-	1	1	-	-	-	-	-	-	2	-	-	-	40			2
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	180			9
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	180			9

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	50%	25%	+33%
'89	25%	58%	08%	-15%
'96	47%	29%	06%	+ 0%
'02	65%	12%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	266	Dec:	38%
	'89	399		25%
	'96	340		18%
	'02	340		12%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus nauseosus albicaulis																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	1	-	-	-	-	-	-	-	-	1	-	-	-	33			1
	96	1	1	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	16	-	-	-	-	-	-	-	-	16	-	-	-	533	24	30	16
	89	2	2	-	-	-	-	-	-	-	4	-	-	-	133	18	20	4
	96	6	6	4	-	-	-	-	-	-	15	-	1	-	320	23	39	16
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80	31	39	4
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	2	3	1	-	-	-	-	-	-	2	2	-	2	200			6
	96	4	1	1	-	-	-	-	-	-	3	-	-	3	120			6
	02	3	1	1	-	-	-	-	-	-	3	-	-	2	100			5
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	80			4
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	100			5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	-31%
'89	45%	09%	18%	+24%
'96	33%	21%	17%	-63%
'02	11%	11%	22%	

Total Plants/Acre (excluding Dead & Seedlings)				
'83	533	Dec:	0%
'89	366		55%
'96	480		25%
'02	180		56%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Gutierrezia sarothrae																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	100	-	-	-	-	-	-	-	-	100	-	-	-	3333			100
	96	1063	-	-	1	-	-	-	-	-	1064	-	-	-	21280			1064
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	3	-	-	-	-	-	-	-	-	3	-	-	-	100			3
	96	338	-	-	-	-	-	-	-	-	338	-	-	-	6760			338
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	83	98	-	-	-	-	-	-	-	-	98	-	-	-	3266	9	11	98
	89	51	-	-	-	-	-	-	-	-	50	-	1	-	1700	8	10	51
	96	234	-	-	3	-	-	-	-	-	237	-	-	-	4740	5	8	237
	02	6	-	-	-	-	-	-	-	-	6	-	-	-	120	5	8	6
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	20	-	-	-	-	-	-	-	-	7	-	7	6	666			20
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	100			5
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	1280			64

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	-24%
'89	00%	00%	19%	+79%
'96	00%	00%	00%	-99%
'02	00%	00%	13%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	3266	Dec:	0%
	'89	2466		27%
	'96	11540		0%
	'02	160		13%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Opuntia spp.																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	3	-	-	-	-	-	-	-	-	2	-	1	-	100			3
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	10	-	-	-	-	-	-	-	-	9	-	1	-	333			10
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	8	-	-	-	-	-	-	-	-	8	-	-	-	160			8
M	83	183	-	-	-	-	-	-	-	-	183	-	-	-	6100	6	6	183
	89	9	-	-	-	-	-	-	-	-	7	-	2	-	300	5	22	9
	96	28	-	-	-	-	-	-	-	-	28	-	-	-	560	6	33	28
	02	42	-	1	-	-	-	-	-	-	43	-	-	-	860	5	16	43
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	3	-	-	-	-	-	-	-	-	-	-	2	1	100			3
	96	20	-	-	-	-	-	-	-	-	11	-	1	8	400			20
	02	18	-	-	-	-	-	1	-	-	10	-	-	9	380			19
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	100			5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	-88%
'89	00%	00%	27%	+27%
'96	00%	00%	18%	+29%
'02	00%	01%	13%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	6100	Dec:	0%
	'89	733		14%
	'96	1000		40%
	'02	1400		27%

Purshia tridentata

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	7	28	0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	00%	00%	00%	
'96	00%	00%	00%	
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	0	Dec:	-
	'89	0		-
	'96	0		-
	'02	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Symphoricarpos oreophilus																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	11	0
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20	7	14	1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	00%	00%	00%	
'96	00%	00%	00%	+ 0%
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	0	Dec:	-
	'89	0		-
	'96	20		-
	'02	20		-